

CLAIMS:

1. Device comprising:
 - at least two transmitting branches (2,3) each for transmitting signals via at least one frequency band,
 - at least two receiving branches (4,5,6) each for receiving signals via at least one frequency band,
 - an antenna switch (1,10) for switching said transmitting branches, and
 - an antenna (7) coupled to said branches (2-6) via said antenna switch (1,10),wherein said antenna switch (1,10) comprises at least one first semiconductor switch (11,21) in series coupled between a first transmitting branch (2) and said antenna (7) and at least one second semiconductor switch (12,22) in series coupled between a second transmitting branch (3) and said antenna (7) and at least one third semiconductor switch (13,23) coupled in parallel to at least one receiving branch (6).
2. Device according to claim 1, wherein said antenna switch (1,10) comprises at least a fourth semiconductor switch (14) coupled in parallel to at least one further receiving branch (4,5).
3. Device according to claim 2, wherein one side of said third semiconductor (13) switch is coupled to said at least one receiving branch (6) and via an inductor (15) to said first and second semiconductor switches (11,12) and the other side is coupled via a capacitor (17) to ground, with one side of said fourth semiconductor switch (14) being coupled via said capacitor (17) to ground and the other side being coupled to said at least one further receiving branch (4,5) and via a further capacitor (16) to said first and second semiconductor switches (11,12).
4. Device according to claim 3, wherein said antenna switch (1) is transmission-line-less.

5. Device according to claim 4, wherein said first transmitting branch (2) transmits in the 900 MHz band, said second transmitting branch (3) transmits in the 1800/1900 MHz band, said at least one receiving branch (6) receives via the 900 MHz band, and said at least one further receiving branch (4,5) comprises a first further receiving branch (5) for receiving via the 1800 MHz band and a second further receiving branch (4) for receiving via the 1900 MHz band.

6. Device according to claim 1, wherein said antenna switch (10) comprises at least one transmission line (24,25) of which one side is coupled to one side of said first semiconductor switch (21) and to said antenna (7), with the other side of said transmission line (24,25) being coupled to said third semiconductor switch (23), and a tap of said transmission line (24,25) being coupled to one side of said second semiconductor switch (22).

7. Device according to claim 6, wherein said antenna switch (10) further comprises a transistor switch (26,27,28) per receiving branch (4,5,6) and is coupled in series between said receiving branch (4,5,6) and said transmission line (24,25).

8. Device according to claim 7, wherein said first transmitting branch (2) transmits in the 900 MHz band, said second transmitting branch (3) transmits in the 1800/1900 MHz band, and said at least one receiving branch (4,5,6) comprises a first receiving branch (6) for receiving via the 900 MHz band and a second receiving branch (5) for receiving via the 1800 MHz band and a third receiving branch (4) for receiving via the 1900 MHz band.

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9. Module for a device, said module comprising:

- at least two transmitting branches (2,3) each for transmitting signals via at least one frequency band,

- at least two receiving branches (4,5,6) each for receiving signals via at least one frequency band,

- an antenna switch (1,10) for switching said transmitting branches, and

- an antenna (7) coupled to said branches (2-6) via said antenna switch (1,10),

wherein said antenna switch (1,10) comprises at least one first semiconductor switch (11,21) in series coupled between a first transmitting branch (2) and said antenna (7) and at least one

second semiconductor switch (12,22) in series coupled between a second transmitting branch (3) and said antenna (7) and at least one third semiconductor switch (13,23) coupled in parallel to at least one receiving branch (6).

- 5 10. Antenna switch (1,10) for switching transmitting branches (2,3) each for transmitting signals via an antenna (7) and at least one frequency band, with at least two receiving branches (4,5,6) each receiving signals via at least one frequency band and said antenna (7), wherein said antenna switch (1,10) comprises:
- at least one first semiconductor switch (11,21) to be coupled in series between
 - 10 a first transmitting branch (2) and said antenna (7),
 - at least one second semiconductor switch (12,22) to be coupled in series between a second transmitting branch (3) and said antenna (7), and
 - at least one third semiconductor switch (13,23) to be coupled in parallel to at least one receiving branch (4,5,6).

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11. Method for switching transmitting branches (2,3) each for transmitting signals via an antenna (7) and at least one frequency band, with at least two receiving branches (4,5,6) each receiving signals via at least one frequency band and said antenna (7), which method comprises the steps of:
- 20 - switching a first transmitting branch (2) via at least one first semiconductor switch (11,21) to be coupled in series between said first transmitting branch (2) and said antenna (7),
 - switching a second transmitting branch (3) via at least one second semiconductor switch (12,22) to be coupled in series between said second transmitting
 - 25 branch (3) and said antenna (7), and
 - switching at least one third semiconductor switch (13,23) to be coupled in parallel to at least one receiving branch (4,5,6).